

References

- Aase, J., and G. Schaefer. 1996. "Economics of Tillage Practices and Spring Wheat and Barley Crop Sequences in the Northern Great Plains," *Journal of Soil and Water Conservation*. 15: pp. 167-70.
- Achorn, F., and M. Broder. 1991. "Mechanics of Applying Nitrogen Fertilizer," *Managing Nitrogen for Groundwater Quality and Farm Profitability*. Madison, WI: Soil Science Society of America.
- AgWeek Magazine*. February 1996.
- Ahearn, M., E. Ball, J. Yee, and R. Nehring. 1998. *Agricultural Productivity in the United States*. AIB-740. U.S. Dept. Agr., Econ. Res. Serv.
- Aillery, M. 1995. *Federal Commodity Programs and Returns to Irrigation in the West*. ERS Staff Paper 9502. U.S. Dept. Agr., Econ. Res. Serv.
- Aldrich, S. 1984. "Nitrogen Management to Minimize Adverse Effects on the Environment," *Nitrogen in Crop Production*. Madison, WI: Soil Science Society of America.
- Aldy, J., J. Hrubovcak, and U. Vasavada. 1998. "The Role of Technology in Sustaining Agriculture and the Environment," *Ecological Economics*. 26: pp. 81-96.
- Alt, K., C. Osborn, and D. Colacicco. 1989. *Soil Erosion: What Effect on Agricultural Productivity?* AIB-556. U.S. Dept. Agr., Econ. Res. Serv.
- Amacher, G., and P. Feather. 1997. "Testing Producer Perceptions of Jointly Beneficial Best Management Practices for Improved Water Quality," *Applied Economics*. 29: pp. 153-9.
- Babcock, B., and A. Blackmer. 1994. "The Ex Post Relationship Between Growing Conditions and Optimal Fertilizer Levels," *Review of Agricultural Economics*. 16 (September).
- Baker, J., T. Logan, J. Davidson, and M. Overcash. 1987. "Summary and Conclusions," in T. Logan, J. Davidson, J. Baker, and M. Overcash, eds., *Effects of Conservation Tillage on Groundwater Quality: Nitrates and Pesticides*. Chelsea, MI: Lewis Publishers.
- Berglund, D., and M. Freeburg. 1995. "Grid Sampling and Precision Agriculture in the Red River Valley." CENTROL Crop Consulting, Twin Valley, MN. July 19. 6 pp.
- Birrell, S. 1995. "Multi-ISFET Sensor System for Soil Analysis." Ph.D dissertation, University of Illinois, Urbana.
- Bock, B., K. Kelley, and J. Meisinger. 1992. "Predicting N Fertilizer Needs in Humid Regions: Summary and Future Directions," in *Predicting N Fertilizer Needs for Corn in Humid Regions*. Bulletin Y-226, National Fertilizer and Environmental Research Center. Tennessee Valley Authority, Muscle Shoals, Alabama.
- Bosch D., and K. Napit. 1992. "Economics of Transferring Poultry Litter to Achieve More Effective Use as Fertilizer," *Journal of Soil and Water Conservation*. 47 (July-August).
- Bosch, D., K. Fuglie, and R. Keim. 1994. *Economic and Environmental Effects of Nitrogen Testing for Fertilizer Management*. Staff Report. U.S. Dept. Agr., Econ. Res. Serv.
- Bouldin, D., S. Klausner, and W. Reid. 1984. "Use of Nitrogen from Manure." *Nitrogen in Crop Production*. Soil Science Society of America, Madison, Wisconsin.
- Bull, L., H. Delvo, C. Sandretto, and B. Lindamood. 1993. "Analysis of Pesticide Use by Tillage Systems in 1990, 1991, and 1992 Corn and Soybeans," *Agricultural Resources: Inputs, Situation and Outlook Report*. AR-32. U.S. Dept. Agr., Econ. Res. Serv.
- Bultena, G., and E. Hoiberg. 1983. "Factors Affecting Farmers' Adoption of Conservation Tillage," *Journal of Soil and Water Conservation*. (May-June): pp. 281-84.
- Calvin, L., and C. Brown. 1996. "Conservation Tillage." Paper presented at the ERS/Farm Foundation Sustainability Workshop. October.
- Carson, R., and R. Mitchell. 1993. "The Value of Clean Water: The Public's Willingness to Pay for Boatable, Fishable, and Swimmable Quality Water," *Water Resources Research*. 29: pp. 2445-54.

- Chambers R., and E. Lichtenberg. 1995. "Economics of Sustainable Farming in the Mid-Atlantic." Final Report to the USDA/EPA Ace Program.
- Chaplin, J., E. Roytburg, and J. Kaplan. 1995. "Measuring the Spatial Performance of Chemical Applicators," in P. Robert, R. Rust, and W. Larson, eds. *Site-Specific Management for Agricultural Systems*. Madison, WI: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.
- Chase, C., and M. Duffy. 1991. "An Economic Comparison of Conventional and Reduced-Chemical Farming Systems in Iowa," *American Journal of Alternative Agriculture*. 6: pp. 168-73.
- Chase, C., M. Duffy, and W. Lotz. 1991. "Economic Impact of Varying Swine Manure Application Rates on Continuous Corn," *Journal of Soil and Water Conservation*. 46.
- Christensen, P. 1989. "Historical Roots for Ecological Economics--Biophysical Versus Allocative Approaches," *Ecological Economics*. 1(1): pp. 17-36.
- Cleveland, C. 1995. "Resource Degradation, Technical Change, and the Productivity of Energy Use in U.S. Agriculture," *Ecological Economics*. 13: pp. 185-201.
- Colburn, J. 1991. Soil Chemical Sensor and Precision Agricultural Chemical Delivery System and Method. U.S. Patent 5,033,397.
- Corbley, K. 1996. "Remote Sensing, GIS, GPS Transforming Data into Information," in *Convergence of Geotechnologies Enhancing Precision Farming @agriculture Online*, @gInnovator online at <<http://www.agriculture.com/contents/agii/agrispot.htm>>.
- Crosson, P. 1995. "Soil Erosion and Its On-Farm Productivity Consequences: What Do We Know?" Discussion Paper 95-29. Resources for the Future, Washington, DC.
- Crutchfield, S., P. Feather, and D. Hellerstein. 1995. *The Benefits of Protecting Rural Water Quality: An Empirical Analysis*. AER-701. U.S. Dept. Agr., Econ. Res. Serv.
- Daly, J. 1990. "Toward Some Operational Principles of Sustainable Development," *Ecological Economics*. 2: pp. 1-6.
- DeQuattro, J. 1996. "Orbiting Eye Will See Where Crops Need Help," *Agricultural Research*. 44: pp. 12-4.
- Doster, D., D. Griffith, J. Mannering, and S. Parsons. 1983. "Economic Returns for Alternative Corn and Soybean Tillage Systems in Indiana," *Journal of Soil and Water Conservation*. 38: pp. 504-9.
- Duffy, M., and M. Hanthorn. 1984. *Returns to Corn and Soybean Tillage Practices*. AER-508. U.S. Dept. Agr., Econ. Res. Serv.
- Economic Report of the President. 1994. Washington, DC: U.S. Government Printing Office.
- _____. 1997. Washington, DC: U.S. Government Printing Office.
- Epplin, F., and T. Tice. 1986. "Influence of Crop and Farm Size on Adoption of Conservation Tillage," *Journal of Soil and Water Conservation*. 41: pp. 424-27.
- Ervin, D., and A. Schmitz. 1996. "A New Era of Environmental Management in Agriculture?" *American Journal of Agricultural Economics*. 78: pp. 1198-1206.
- Faeth, P. 1993. "Evaluating Agricultural Policy and the Sustainability of Production Systems: An Economic Framework," *Journal of Soil and Water Conservation*. March/April: pp. 94-9.
- _____. 1996. "Environment and Productivity in Agriculture." In *Has Environmental Protection Really Reduced Productivity Growth: We Need Unbiased Measures*. Washington, DC: World Resources Institute.
- Fernandez-Cornejo, J. 1996a. "The Microeconomic Consequences of IPM Adoption: Theory and Application," *Agricultural and Resource Economic Review*. 25: pp. 149-60.
- _____. 1996b. "IPM Adoption by Growers of Selected Fruits and Vegetables." Paper presented at ERS Sustainability Workshop. August.

- _____. 1998. "Environmental and Economic Consequences of Technology Adoption: IPM in Viticulture," *Agricultural Economics*. 18: pp. 145-55.
- Fernandez-Cornejo, J., and C. Castaldo. 1998. "The Diffusion of IPM Techniques Among Fruit Growers in the USA," *Journal of Production Agriculture*. October-December.
- Fernandez-Cornejo, J., and S. Jans 1996. "The Economic Impact of IPM Adoption For Orange Producers in California and Florida," *Acta Horticulturae*. 429: pp. 325-34.
- Fernandez-Cornejo, J., and A. Kackmeister. 1996. "The Diffusion of Integrated Pest Management Techniques," *Journal of Sustainable Agriculture*. 7: pp. 71-102.
- Fernandez-Cornejo, J., E. Beach, and W. Huang. 1994. "The Adoption of IPM Techniques By Vegetable Growers in Florida, Michigan, and Texas," *Journal of Agricultural and Applied Economics*. 1: pp. 158-72.
- Fuglie, K., N. Ballenger, K. Day, C. Klotz, M. Ollinger, J. Reilly, U. Vasavada, and J. Yee, with contributions from J. Fisher and S. Payson. 1996. *Agricultural Research and Development: Public and Private Investments Under Alternative Markets and Institutions*. AER-735. U.S. Dept. Agr., Econ. Res. Serv.
- Gadsby, D., R. Magleby, and C. Sandretto. 1987. "Why Practice Conservation?" *Soil and Water Conservation News*. December.
- Gaultney, L., and J. Shonk. 1988. "Spectroscopic sensing for the determination of organic matter content." ASAE Paper No. 887-2142. St. Joseph, Mich.: Amer. Soc. Agric. Eng.
- Giacchetti, N. 1996. "The Pricing Paradox: Here's How One Dealership Puts a Price Tag on Precision Agricultural Services," *Farm Chemicals*. 159: p. 38.
- Goering, C. 1993. "Recycling a Concept," *Agricultural Engineering Magazine*. November. St. Joseph, Mich: Amer. Soc. Agric. Eng.
- Graham-Tomasi, T. 1991. "Sustainability: Concepts and Implications for Agricultural Research Policy," in P. Pardey, J. Roseboom, and J. Anderson, eds., *Agricultural Research Policy: International Quantitative Perspectives*. New York, NY: Cambridge University Press.
- Greene, C., R. Kramer, G. Norton, E. Rajotte, and R. McPherson. 1985. "An Economic Analysis of Soybean Integrated Pest Management," *American Journal of Agricultural Economics*. 67: pp. 567-72.
- Hayami, Y., and V. Ruttan. 1985. *Agricultural Development: An International Perspective*. Baltimore, MD: The Johns Hopkins University Press.
- Heimlich, R., K. Wiebe, D. Gadsby, R. House, and R. Claasen. 1998. *Wetlands and Agriculture: Private Interests and Public Benefits*. AER-765. U.S. Dept. Agr., Econ. Res. Serv.
- Hicks, J. 1932. *The Theory of Wages*. London: Macmillan and Co.
- Hoeft, R. 1984. "Current Status of Nitrification Inhibitor Use in U.S. Agriculture," *Nitrogen in Crop Production*. Soil Science Society of America Madison, Wisconsin.
- Hrubovcak, J., M. LeBlanc, and B. Eakin. 1995. *Accounting for the Environment in Agriculture*. TB-1847. U.S. Dept. Agr., Econ. Res. Serv.
- Huang, W., and S. Daberkow. 1996. "The Role of Planting Flexibility and the ARP in Encouraging Sustainable Agricultural Practices," *Journal of Sustainable Agriculture*. 7: 163-179.
- Huang, W., and R. Lantin. 1993. "A Comparison of Farmers' Compliance Costs to Reduce Excess Nitrogen Fertilizer Use Under Alternative Policy Options," *Review of Agricultural Economics*. 15.
- Huang, W., and H. Taylor. 1996. "Use of Nitrogen Stabilizers in U.S. Crop Production and Economic and Environmental Effects." Paper presented in 1996 Annual Meeting of Southern Agricultural Economics Association. Greensboro, North Carolina, February.

- Huang, W., D. Shank, and T. Irwin Hewitt. 1996. "On-Farm Costs of Reducing Nitrogen on Cropland Vulnerable to Nitrate Leaching," *Review of Agricultural Economics*. 18: pp. 325-39.
- Jackson, R. 1984. "Remote Sensing of Vegetation Characteristics for Farm Management." Proceedings. SPIE (The International Society for Optical Engineers) 475: pp. 81-96.
- Johnson, G., J. Cardina, and D. Mortensen. 1997. "Site-Specific Weed Management: Current and Future Directions," in F. Pierce, and E. Sadler, eds., *The State of Site-Specific Management in Agriculture*. Madison, WI: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.
- Jolly, R., W. Edwards, and D. Ehrbach. 1983. "An Economic Analysis of Conservation Tillage in Iowa," *Journal of Soil and Water Conservation*. 38: pp. 291-4.
- Jordan, J., and A. Elnagheeb. 1993. "Willingness to Pay for Improvements in Drinking Water Quality," *Water Resources Research*. 29: pp. 237-45.
- Kitchen, N., D. Hughes, K. Sudduth, and S. Birrell. 1995. "Comparison of Variable Rate to Single Rate Nitrogen Fertilizer Application: Corn Production and Residual NO₃-N," in P. Robert, R. Rust, and W. Larson, eds., *Site-Specific Management for Agricultural Systems*. Madison, WI: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.
- Klemme, R. 1985. "A Stochastic Dominance Comparison of Reduced Tillage Systems in Corn and Soybean Production Under Risk," *American Journal of Agricultural Economics*. 67: pp. 550-7.
- Kohls, C. 1996. "Costs of Precision: Here's a Sampling of Equipment Costs to Aid in Your Precision Planning," *Farm Chemicals*. 159(4): pp. 21-6.
- Kovach, J., and J. Tette. 1988. "A Survey of the Use of IPM by New York Apple Producers," *Agricultural Ecosystems and Environment*. 20: pp. 101-8.
- Krause, M., and J. Black. 1995. "Optimal Adoption Strategies for No-till Technology in Michigan," *Review of Agricultural Economics*. 17: pp. 299-310.
- Ladewig, H., and R. Garibay. 1983. "Reasons Why Ohio Farmers Decide For or Against Conservation Tillage," *Journal of Soil and Water Conservation*. pp. 487-88.
- Lamb, F. 1996. Cropix, Inc. Irrigon, Oregon (personal communication).
- Leopold Center for Sustainable Agriculture. 1996. Progress Report: Summaries of 15 Research and Education Projects. Ames, IA: Iowa State University Press.
- Lin, B., H. Taylor, H. Delvo, and L. Bull. 1993. "Factors Influencing Herbicide Use in Corn Production," *Agricultural Resources: Inputs, Situation and Outlook Report*. AER-32. U.S. Dept. Agr., Econ. Res. Serv.
- Lowenborg-DeBoer, J. 1996 "Value of Yield Monitors to Farm Managers in Indiana," Special Report, <@agriculture Online, @gInnovator online at <http://www.agriculture.com/contents/aginn/sr04pur6.html>>.
- Lowenborg-DeBoer, J., and S. Swinton. 1995. "Economics of Site-Specific Management in Agronomic Crops," Staff Paper 95-14. Department of Agricultural Economics, Purdue University, West Lafayette, IN.
- Luna, J., V. Allen, J. Fontenot, L. Daniels, D. Vaughan, S. Hagood, D. Taylor, and C. Laub. 1994. "Whole Farm Systems Research: An Integrated Crop and Livestock Systems Comparison Study," *American Journal of Alternative Agriculture*. 9: pp. 57-63.
- Lynch, S., C. Greene, and C. Kramer-LeBlanc, editors. 1997. *Proceedings of the Third National IPM Symposium/Workshop*. Miscellaneous Publication 1542. U.S. Dept. Agr., Econ. Res. Serv.
- Magleby, R., C. Sandretto, W. Crosswhite, and C. Osborn. 1995. *Soil Erosion and Conservation in the United States*. AER-718. U.S. Dept. Agr., Econ. Res. Serv.

- Manchester, A., and J. Allshouse. 1997. *U.S. Food Expenditures*. Data Product ERS-91003. U.S. Dept. Agr., Econ. Res. Serv.
- Martin, M., M. Schreiber, J. Riepe, and J. Bahr. 1991. "The Economics of Alternative Tillage Systems, Crop Rotations, and Herbicide Use on Three Representative East-Central Corn Belt Farms," *Weed Science*. 39: pp. 299-307.
- McGrath D., J. Ellington, and A. Leedahl. 1990. *Variable application rates based on soil organic matter*. Pap. Amer. Soc. Agric. Eng. Winter 1990. Paper 901598. St. Joseph, Mich.: Amer. Soc. Agric. Eng.
- McGrath, D., A. Skotnikov, and V. Bobrov. 1995. "A Site-Specific Expert System with Supporting Equipment for Crop Management, in P. Robert, R. Rust, and W. Larson, eds., *Site-Specific Management for Agricultural Systems*. Madison, WI: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.
- McNamara, K., M. Wetzstein, and G. Douce. 1991. "Factors Affecting Peanut Producer Adoption of Integrated Pest Management," *Review of Agricultural Economics*. 13: pp. 129-39.
- Meadows, D.H., D.L. Meadows, J. Randers, and W. Behrens III. 1972. *The Limits to Growth*. New York: Universe Books.
- Moran, M., Y. Inoue, and E. Barnes. 1997. "Opportunities and Limitations for Image-Based Remote Sensing in Precision Crop Management," *Remote Sensing of Environment*. 61: pp. 319-XX.
- Morgan, M., and D. Ess. 1996. "Sensors for Tomorrow's Precision Agriculture," in *New Trends in Farm Machinery Development and Agriculture*. SAE Special Publication, SP-1194, SAE.
- Murcott, S. 1997. "Sustainable Systems: Definitions, Principles, Criteria, and Indicators." Paper presented at the 1997 American Association for the Advancement of Science, Seattle, Washington.
- National Agricultural Pesticide Impact Assessment Program. "Biological and Economic Assessment of Pesticide Use on Corn and Soybeans," NAPIAP Report No. 1-CA-95.
- National Research Council. 1989. *Alternative Agriculture*. Washington, DC: National Academy Press.
- _____. 1991a. *Mitigating Losses from Land Subsidence in the United States*. Washington, DC: National Academy Press.
- _____. 1991b. *Sustainable Agriculture Research and Education in the Field, A Proceedings*. Washington, DC: National Academy Press.
- _____. 1993. *Soil and Water Quality: An Agenda for Agriculture*. Washington, DC: National Academy Press.
- _____. 1995. *The Global Positioning System: A Shared National Asset, Recommendations for Technical Improvements and Enhancements*. Washington, DC: National Academy Press.
- _____. 1996. *Ecologically Based Pest Management: New Solutions for A New Century*. Washington, DC: National Academy Press.
- _____. 1997. *Precision Agriculture in the 21st Century: Geospatial and Information Technologies in Crop Management*. Washington, DC: National Academy Press.
- Nelson, D., and D. Huber. 1987. "Nitrification Inhibitors for Corn Production," National Corn Handbook 55. Purdue University Cooperative Extension Service.
- Nielsen, E., and L. Lee. 1987. *The Magnitude and Costs of Groundwater Contamination from Agricultural Chemicals*. AER-576. U.S. Dept. Agr., Econ. Res. Serv.
- Nordhaus, W. 1992. "Lethal Model 2: The Limits to Growth Revisited," in W. Brainard and G. Perry, eds., *Brookings Papers on Economic Activity 2*, Washington, DC: Brookings Institution.
- Northwest Area Foundation. 1994. *A Better Row to Hoe: The Economic, Environmental, and Social Impact of Sustainable Agriculture*. Minneapolis, MN.

- Office of Technology Assessment. 1995. *Challenges for U.S. Agricultural Research Policy*. Report OTA-ENV-639. Washington, DC: Government Printing Office.
- Ogg, C. 1995. "Roles for Site-Specific Research in U.S. Pollution Prevention Initiatives," in P. Robert, R. Rust, and W. Larson, eds., *Site-Specific Management for Agricultural Systems*. Madison, WI: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.
- Olmstead, A., and P. Rhode. 1993. "Induced Innovation and American Agriculture: A Reconsideration," *Journal of Political Economy*. 101: pp. 100-18.
- Osborn, C., and K. Konyar. 1990. *A Fresh Look at the CRP*. AO-166. U.S. Dept. Agr., Econ. Res. Serv.
- Pimentel D., and M. Giampietro. 1994. "Food, Land, Population and the U.S. Economy." <<http://dieoff.org/page40.htm>>.
- President's Council on Sustainable Development. 1996. *Sustainable America: A New Consensus*. Washington, DC: Government Printing Office.
- Rahm, M., and W. Huffman. 1984. "The Adoption of Reduced Tillage: The Role of Human Capital and Other Variables," *American Journal of Agricultural Economics*. 66: pp. 405-13.
- Rhoades, F. 1991. "Nitrogen or Water Stress: Their Interrelationships," *Managing Nitrogen for Groundwater Quality and Farm Profitability*. Madison, WI: Soil Science Society of America.
- Ribaudo, M. 1989. *Water Quality Benefits from the Conservation Reserve Program*. AER-606. U.S. Dept. Agr., Econ. Res. Serv.
- Scharf, P., and M. Alley. 1988. "Nitrogen Loss Pathways and Nitrogen Loss Inhibitors: A Review," *Journal of Fertilizer Issues*. 5 (Oct.-Dec.).
- Shortle, J., W. Musser, W. Huang, B. Roach, K. Krehling, D. Beegle, and R. Fox. 1993. *Economics of Environmental Potential of the Pre-side-dressing Soil Nitrate Test*. Final Report to the Environmental Protection Agency. The Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University.
- Simon, J., G. Weinrauch, and S. Moore. 1994. "The Reserves of Extracted Resources: Historical Data," *Non-Renewable Resources*, pp. 325-40.
- Smith, V. 1992. "Environmental Costing for Agriculture: Will It Be Standard Fare in the Farm Bill of 2000?" *American Journal of Agricultural Economics*. 74: pp. 1076-88.
- Solow, R. 1992. "An Almost Practical Step Toward Sustainability," *Resources Policy*. 19(3): pp. 162-72.
- Sudduth, K., S. Borgelt, S. Birrell, and N. Kitchen. 1994. "Within-Field Location and Sensing Technology," ACSM/ASPRS Annual Convention & Exposition. Baltimore: ACSM/ASPRS. 1: pp. 624-33.
- Sun, H., J. Bergstrom, and J. Dorfman. 1992. "Estimating the Benefits of Groundwater Contamination Control," *Southern Journal of Agricultural Economics*. 24: pp. 63-71.
- U.S. Department of Agriculture. 1989. *The Second RCA Appraisal: Soil, Water, and Related Resources on Nonfederal Land in the United States, Analysis of Conditions and Trends*. Miscellaneous Publication 1482.
- _____, Agricultural Research Service. 1993. "USDA Programs Related to Integrated Pest Management," USDA Program Aid 1506, Washington, DC.
- _____, Economic Research Service. 1994. *Agricultural Resources and Environmental Indicators*. AH-705.
- _____, Economic Research Service. 1997. *Agricultural Resources and Environmental Indicators, 1996-97*. AH-712.
- _____, National Agricultural Statistics Service. 1997. *Historic Data Information*. <<http://www.usda.gov/nass/pubs/histdata.htm>>.
- _____, Sustainable Agriculture Research and Education Program. 1995. *SARE 1995 Project Highlights*.
- U.S. Environmental Protection Agency (USEPA). <<http://www.epa.gov/25year/water/water.html>>.

_____. Office of Water. 1998. *National Water Quality Inventory: 1996 Report to Congress*.

U.S. Geological Survey (USGS), U.S. Dept. of the Interior. 1985. *National Water Summary 1984-Hydrological Events Selected Water-Quality Trends and Ground-Water Resources*. Water-Supply Paper 2275.

_____. 1995. *Water-Level Changes in the High Plains Aquifer, Predevelopment to 1994*. <http://water.usgs.gov/public/wid/FS_215-95/FS_215-95.html>.

Usery, E., S. Pocknee, and B. Boydell. 1995. "Precision Farming Data Management Using Geographical Information Systems," *Photogrammetric Engineering & Remote Sensing*. 61: pp. 1383-91.

Vandeman, A., J. Fernandez-Cornejo, S. Jans, and B. Lin. 1994. *Adoption of Integrated Pest Management in U.S. Agriculture*. AIB-707. U.S. Dept. Agr., Econ. Res. Serv.

Vasavada, U., J. Hrubovcak, and J. Aldy. 1997. "Incentives for Sustainable Agriculture," *Agricultural Outlook*. AO-238. March: pp. 21-4.

Vetsch, J., G. Malzer, P. Robert, and D. Huggins. 1995. "Nitrogen Specific Management by Soil Condition: Managing Fertilizer Nitrogen in Corn," in P. Robert, R. Rust, and W. Larson, eds., *Site-Specific Management for Agricultural Systems*. Madison, WI: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.

Vision News. 1996. "Agronomist predicts geo-referencing will change business of agriculture," volume 2 (Spring). Rockwell Agricultural Systems, Cedar Rapids, IA. 12 pp.

Weitzman, M. 1997. "Sustainability and Technical Progress," *Scandinavian Journal of Economics*. 99(1), pp. 1-13.

Whipker, L., and J. Akridge. 1996. "Precision Ag and Your Customer Base," *Farm Chemicals*. 159: pp. 12-14.

Williams, J. 1988. "A Stochastic Dominance Analysis of Tillage and Crop Insurance Practices in a Semi-arid Region," *American Journal of Agricultural Economics*. 70: pp. 112-20.

Williams, J., R. Llewelyn, and G. Barnaby. 1990. "Risk Analysis of Tillage Alternatives with Government Programs," *American Journal of Agricultural Economics*. 1: pp. 172-81.

Williams, J., R. Llewelyn, and C. Mikesell. 1989. "An Economic Risk Analysis of Conservation Tillage Systems for Wheat, Grain Sorghum, and Soybeans in the Great Plains," *Journal of Soil and Water Conservation*. 44: pp. 234-9.

World Commission on Environment and Development. 1987. *Our Common Future*. Oxford: Oxford University Press.

Young, D., T. Kwon, and F. Young. 1993. "Profit and Risk for Integrated Conservation Farming Systems in the Palouse," Washington State University, Unpublished paper, June.